

**Notice of Allowability**

Application No.

10/020,656

Applicant(s)

INAGAKI ET AL

Examiner

Art Unit

Ted T. Vo

2192

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/01/04.
2. ☒ The allowed claim(s) is/are 1-19.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                 |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>4/14/05</u> . |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>1/24/05, 4/08/05</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                       | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                        |
|  | 9. <input type="checkbox"/> Other _____   |

*Ted T. Vo*  
TED T. VO  
primary Examiner

**EXAMINER'S AMENDMENT**

1. This action is in response to the amendment filed on 12/01/04.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicants' representative, Mr. Michael J. Buchenheimer, Attorney Reg. No. 33,162, on 4/13/05.

3. Examiner amendment is given to the Specification.
  - The Abstract of the Specification has been amended to eliminate the use of the legal phraseology.

4. The application has been amended as follows to place the application in the condition for allowance:

**In the specification, a new Abstract attaches hereto on a separate sheet.**

#### **ABSTRACT OF THE DISCLOSURE**

A program optimization method for converting program source code written in a programming language into machine language includes steps of: analyzing a target program and detecting an exception generative instruction, which may generate an exception, and exception generation detection instructions, which branches a process to an exception process when an exception occurrence condition is detected and an exception has occurred. The method also includes steps of dividing the exception generation detection instructions into first instructions, for the detection of exception occurrence conditions, and into second instructions, for branching processes to the exception process when the exception occurrence conditions are detected; and establishing dependencies among program instructions, so that when one of the exception occurrence conditions is detected the process is shifted from a first instruction to a second instruction, and so that when none of the exception occurrence conditions are detected, the process is shifted from a first instruction to an exception generative instruction.

5. The amendment and arguments filed on 12/01/04 have been fully considered and overcome the rejection under the prior art of record, Chambers et al., "Dependence Analysis for Java".

Chambers et al., "Dependence Analysis for Java", remains the closest art of record.

The cited references in the information disclosure statement filed on 01/24/05 and 04/08/05, which are not marked with Examiner initial, are not considered because the references are not written in English.

#### **Reasons for Allowance**

6. Claims 1-19 are allowed.

Prior art of record, Chambers, discloses dependent analysis in program optimization for Java that analyzes and determines potentially excepting instructions in a program. The variables of the program instructions that have the potential exception are associated with abstract locations for handling. The result of data dependent analysis is presented as a data dependent graph, which shows the occurrence conditions of a detected exception and shifted instructions. Chambers do not disclose generating compensation codes for each detection instruction, and does not disclose the program optimization that includes converting an area in the program within predetermined range so that the occurrence of a detected exception is generated by multiple exception generative instructions.

As pointed out by Applicants (Remarks: page 13, lines 8-12), Chambers teaches how to relax the ordering among exceptions but does not teach or suggest generating compensation codes or exception handler with the compensation code. Also, as pointed out by Applicants (Remarks: page 13, lines 20-24), Chambers does not teach converting an area in the program within predetermined range so that the occurrence of a detected exception is generated by multiple exception generative instructions.

Therefore, the following is an examiner's statement of reasons for allowance: The cited prior arts taken alone or in combination fail to teach claimed invention as a program optimization method,

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compilers, a computer system, for converting the source code for a program written in a program language into machine language for optimizing, a storage medium, and a program transmission apparatus, comprising at least features:

*"establishing dependencies among program instructions, so that when one of said exception occurrence conditions is detected the process is shifted from a first instruction to a second instruction, and so that when none of said exception occurrence conditions are detected the process is shifted from a first instruction to an exception generative instruction; and generating compensation codes for each exception generation detection instruction"*

as recited in such manners in independent Claims 1, 7, 14, 16 and 18;

and so as,

*"establishes dependencies among the instructions of said program, so that, when an exception has been generated by said exception generative instruction, following the execution of said exception generative instruction the execution of instructions is inhibited, and converts an area in said program, within a predetermined range, so that the occurrence of an exception is detected when an exception is generated by at least one of multiple exception generative instructions"*

as recited in such manners in independent Claim 12.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3694. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Ted Vo", with a stylized flourish at the end.

Ted T. Vo  
Primary Examiner  
Art Unit 2192  
April 14, 2005